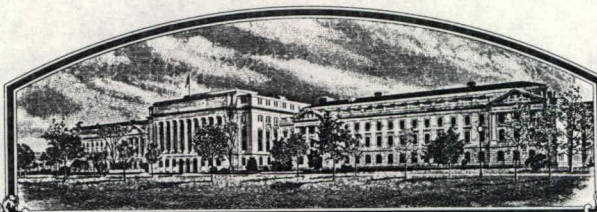


No.

8100067



THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

North American Plant Breeders Inc.

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED NOVEL VARIETY OF SEXUALLY REPRODUCED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF *eighteen* YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, IMPORTING IT, OR EXPORTING IT, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT (U.S.C. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

ALFALFA

'Maverick'

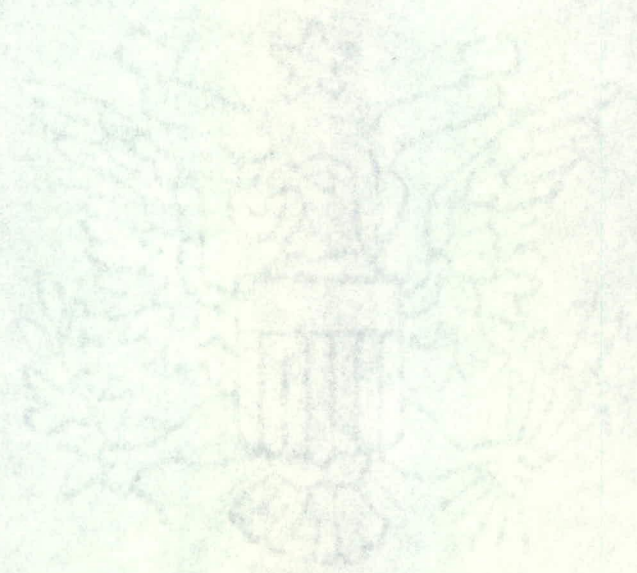


In Testimony Whereof, I have hereunto set my hand and caused the seal of the Plant Variety Protection Office to be affixed at the City of Washington this 30th day of April in the year of our Lord one thousand nine hundred and eighty-four.

Attest:

Kenneth H. Wood
Commissioner
Plant Variety Protection Office
Grain Division
Agricultural Marketing Service

John R. Block
Secretary of Agriculture



1983

Exhibit A

Origin and Breeding History of the Variety

'Maverick'

'Maverick' is a 55 clone synthetic variety selected at Ames, Iowa, for resistance to Phytophthora root rot, root size, regrowth vigor and flower production.

Parentage traces to Rambler, Roamer, Kane, Drylander, Beaver, and Fosters Siberian.

Breeder seed was produced on cuttings of the 55 parent clones under field isolation near Warden, Washington.

During seed multiplication, no variants beyond the limits defined under Exhibit C have been found, and multiplication procedures will ensure that seed being sold as 'Maverick' will not be shifted in characteristics beyond presently acceptable limits for alfalfa varieties.

It is also confirmed that 'Maverick' meets presently acceptable levels of uniformity for alfalfa varieties.

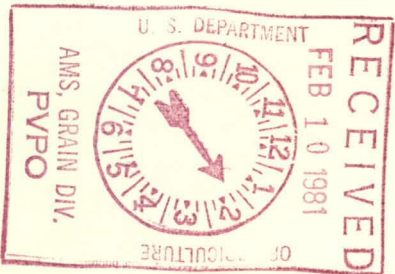


Exhibit B revised

Novelty Statement

Maverick

Maverick most closely resembles the variety Roamer. Maverick differs from Roamer by having a low percentage of plants exhibiting the creeping root habit while Roamer plants are predominately creeping rooted.





INSTRUCTIONS

GENERAL: Send an original copy of the application and exhibits, at least 2,500 viable seeds, and \$500 fee (\$250 filing fee and \$250 examination fee) to U.S. Dept. of Agriculture, Agricultural Marketing Service, Livestock, Poultry, Grain and Seed Division, Plant Variety Protection Office, National Agricultural Library Building, Beltsville, Maryland 20705. (See section 180.175 of the Regulations and Rules of Practice.) Retain one copy for your files. All items on the face of the form are self-explanatory unless noted below.

ITEM

- 5 Give the date the applicant determined that he had a new variety based on (1) the definition in section 41(a) of the Act and (2) the date a decision was made to increase the seed.
- 13a Give: (1) the genealogy, including public and commercial varieties, lines, or clones used, and the breeding method; (2) the details of subsequent stages of selection and multiplication; (3) the type and frequency of variants during reproduction and multiplication and state how these variants may be identified and (4) evidence of uniformity and stability.
- 13b Give a summary statement of the variety's novelty. Clearly state how this novel variety may be distinguished from all other varieties in the same crop. If the new variety most closely resembles one or a group of related varieties: (1) identify these varieties and state all differences objectively; (2) attach statistical data for characters expressed numerically and demonstrate that these differences are significant; and (3) submit, if helpful, seed and plant specimens or photographs of seed and plant comparisons clearly indicating novelty.
- 13c Fill in the Exhibit C, Objective Description form, for all characteristics for which you have adequate data.
- 13d Describe any additional characteristics that are not described, or whose description cannot be accurately conveyed in Exhibit C. Use comparative varieties as is necessary to reveal more accurately the description of characteristics that are difficult to describe, such as, plant habit, plant color, disease resistance, etc.
- 14a If "YES" is specified (seed of this variety be sold by variety name only as a class of certified seed) the applicant may NOT reverse his affirmative decision after the variety has either been sold and so labeled, his decision published, or the certificate has been issued. However, if the applicant specified "NO," he may change his choice. (See section 180.16 of the Regulations and Rules of Practice.)
- 15a See section 42 of the Plant Variety Protection Act and section 180.7 of the Regulations and Rules of Practice.



APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

INSTRUCTIONS: See Reverse.

No certificate for plant variety protection may be issued unless a completed application form has been received (5 U.S.C. 553).

1a. TEMPORARY DESIGNATION OF VARIETY NAPB 53		1b. VARIETY NAME Maverick		FOR OFFICIAL USE ONLY PV NUMBER 8100067	
2. KIND NAME Alfalfa		3. GENUS AND SPECIES NAME Medicago sativa		FILING DATE 3/9/81	TIME 2:30 A.M.
4. FAMILY NAME (BOTANICAL) Leguminacea FABACEAE		5. DATE OF DETERMINATION February 1975		FEE RECEIVED \$ 500.00 \$ 250.00	DATE 3/9/81 4/4/84
6. NAME OF APPLICANT(S) North American Plant Breeders		7. ADDRESS (Street and No. or R.F.D. No., City, State, and ZIP Code) 5201 Johnson Drive, P. O. Box 2955, Mission, Kansas 66201		8. TELEPHONE AREA CODE AND NUMBER (913) 384-4940	
9. IF THE NAMED APPLICANT IS NOT A PERSON, FORM OF ORGANIZATION: (Corporation, partnership, association, etc.) Corporation			10. IF INCORPORATED, GIVE STATE AND DATE OF INCORPORATION Connecticut		11. DATE OF INCORPORATION March 9, 1973
12. NAME AND MAILING ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS: Mr. Giles Dixon, North American Plant Breeders, P. O. Box 2955, Mission, Kansas 66201 Dr. Jim B. Moutray, North American Plant Breeders, R. R. #3, Ames, Iowa 50010					

13. CHECK BOX BELOW FOR EACH ATTACHMENT SUBMITTED:

- ☒ 13A. Exhibit A, Origin and Breeding History of the Variety (See Section 52 of the Plant Variety Protection Act.)
- ☒ 13B. Exhibit B, Novelty Statement.
- ☒ 13C. Exhibit C, Objective Description of the Variety (Request form from Plant Variety Protection Office.)
- ☐ 13D. Exhibit D, Additional Description of the Variety.

14a. DOES THE APPLICANT(S) SPECIFY THAT SEED OF THIS VARIETY BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED? (See Section 83(a). (If "Yes," answer 14B and 14C below.) ☐ YES ☒ NO

14b. DOES THE APPLICANT(S) SPECIFY THAT THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS? ☒ YES ☐ NO

14c. IF "YES," TO 14B, HOW MANY GENERATIONS OF PRODUCTION BEYOND BREEDER SEED? ☒ FOUNDATION ☐ REGISTERED ☒ CERTIFIED

15a. DID THE APPLICANT(S) FILE FOR PROTECTION OF THIS VARIETY IN OTHER COUNTRIES? ☐ YES ☒ NO (If "Yes," give name of countries and dates.)

15b. HAVE RIGHTS BEEN GRANTED THIS VARIETY IN OTHER COUNTRIES? ☐ YES ☒ NO (If "Yes," give name of countries and dates.)

16. DOES THE APPLICANT(S) AGREE TO THE PUBLICATION OF HIS/HER (THEIR) NAME(S) AND ADDRESS IN THE OFFICIAL JOURNAL? ☒ YES ☐ NO

17. The applicant(s) declare(s) that a viable sample of basic seed of this variety will be furnished with the application and will be replenished upon request in accordance with such regulations as may be applicable.

The undersigned applicant(s) is (are) the owner(s) of this sexually reproduced novel plant variety, and believe(s) that the variety is distinct, uniform, and stable as required in Section 41, and is entitled to protection under the provisions of Section 42 of the Plant Variety Act.

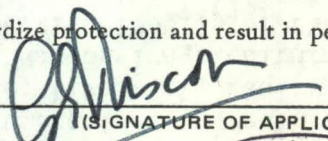
Applicant(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.

2-3-81

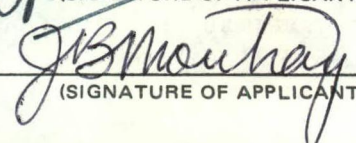
(DATE)

1-30-81

(DATE)



(SIGNATURE OF APPLICANT)



(SIGNATURE OF APPLICANT)

OBJECTIVE DESCRIPTION OF VARIETY

Alfalfa (Medicago sativa L. complex)

NAME OF APPLICANT(S) North American Plant Breeders	VARIETY NAME OR TEMPORARY DESIGNATION Maverick
ADDRESS (Street and No., or R.F.D. No., City, State, and Zip Code) 5201 Johnson Drive, P. O. Box 2955 Mission, Kansas 66201	FOR OFFICIAL USE ONLY PVPO NUMBER 8100067

Place the appropriate number that describes the varietal character of this variety in the boxes below.

Place a zero in first box (e.g. or) when number is either 99 or less or 9 or less.

NOTE: For single plant data a minimum of 100 plants is suggested

1. PRIMARY AREA OF ADAPTATION <input type="text" value="1"/> 1 = NORTHWEST 2 = NORTHCENTRAL 3 = NORTHEAST 4 = SOUTHEAST 5 = SOUTHWEST 6 = SOUTHERN PLAINS 7 = INTERMOUNTAIN	INDICATE AREA WHERE TEST WAS CONDUCTED. FURTHER EXPLANATION CAN GO IN COMMENTS AT THE END OF THE FORM. <input type="text" value="1,2"/> AREA TESTED									
2. WINTER HARDINESS <input type="text" value="8"/> 1 = NON-HARDY (Mesa Sirsa) 3 = INTERMEDIATE NON-HARDY 5 = MODERATELY HARDY (Saranac) 7 = HARDY (Vernal) 9 = EXTREMELY HARDY (Norseman)	 <input type="text" value="1,2"/> AREA TESTED									
 <input type="text" value="2"/> SOURCE OF INFORMATION: 1 = ANTICIPATED 2 = MEASURED										
3. FALL GROWTH HABIT <input type="text" value="8"/> 1 = ERECT (Mesa Sirsa) 3 = SEMIERECT (DuPuits) 5 = INTERMEDIATE (Saranac) 7 = SEMIDECUMBENT (Vernal) 9 = DECUMBENT (Norsement)	 <input type="text" value="1,2"/> AREA TESTED									
4. RECOVERY AFTER FIRST SPRING CUTTING <input type="text" value="8"/> 1 = VERY FAST (Mesa Sirsa) 3 = FAST (Saranac) 5 = INTERMEDIATE 7 = SLOW (Vernal) 9 = VERY SLOW (Norseman)	 <input type="text" value="1,2"/> AREA TESTED									
5. FLOWERING DATE (FIRST SPRING GROWTH) <table border="1"><tr><td><input type="text" value="0"/></td><td><input type="text" value="3"/></td></tr></table> DAYS EARLIER THAN DAYS LATER THAN <table border="1"><tr><td><input type="text" value="4"/></td></tr></table> 1 = MESA SIRSA 2 = LAHONTAN 3 = SARANAC 4 = VERNAL 5 = NORSEMAN	<input type="text" value="0"/>	<input type="text" value="3"/>	<input type="text" value="4"/>	 <input type="text" value="2"/> AREA TESTED						
<input type="text" value="0"/>	<input type="text" value="3"/>									
<input type="text" value="4"/>										
6. CROWN TYPE 1 (SPREADING ROOTS) DEC ROOTS <input checked="" type="checkbox"/> 1 = SPREADING ROOTS 3 = SPREADING RHIZOMES (Teton) 5 = BROAD (Vernal) 7 = INTERMEDIATE (Saranac) 9 = NARROW (Mesa Sirsa)	 <input type="text" value="2"/> AREA TESTED									
7. PLANT COLOR <input type="text" value="5"/> 3 = DARK GREEN (Weevichek) 5 = GREEN (Vernal) 7 = LIGHT GREEN (Ranger)	 <input type="text" value="2"/> AREA TESTED									
8. HAIRINESS <table border="1"><tr><td><input type="text" value=""/></td><td><input type="text" value=""/></td><td><input type="text" value=""/></td></tr></table> % PLANTS WITH PUBESCENT STEMS <table border="1"><tr><td><input type="text" value=""/></td><td><input type="text" value=""/></td><td><input type="text" value=""/></td></tr></table> % PLANTS WITH PUBESCENT PODS	<input type="text" value=""/>	<input type="text" value=""/>	<input type="text" value=""/>	<input type="text" value=""/>	<input type="text" value=""/>	<input type="text" value=""/>				
<input type="text" value=""/>	<input type="text" value=""/>	<input type="text" value=""/>								
<input type="text" value=""/>	<input type="text" value=""/>	<input type="text" value=""/>								
9. POD SHAPE <table border="1"><tr><td><input type="text" value=""/></td><td><input type="text" value=""/></td><td><input type="text" value=""/></td></tr></table> % PLANTS WITH TIGHT COILS <table border="1"><tr><td><input type="text" value=""/></td><td><input type="text" value=""/></td><td><input type="text" value=""/></td></tr></table> % PLANTS WITH LOOSE COILS <table border="1"><tr><td><input type="text" value=""/></td><td><input type="text" value=""/></td><td><input type="text" value=""/></td></tr></table> % PLANTS WITH SICKLE PODS (Less than 1 coil)	<input type="text" value=""/>	<input type="text" value=""/>	<input type="text" value=""/>	<input type="text" value=""/>	<input type="text" value=""/>	<input type="text" value=""/>	<input type="text" value=""/>	<input type="text" value=""/>	<input type="text" value=""/>	
<input type="text" value=""/>	<input type="text" value=""/>	<input type="text" value=""/>								
<input type="text" value=""/>	<input type="text" value=""/>	<input type="text" value=""/>								
<input type="text" value=""/>	<input type="text" value=""/>	<input type="text" value=""/>								

10. GIVE ITEM LENGTH FREQUENCY DISTRIBUTION FOR SUBMITTED AND 1 TO 5 STANDARD VARIETIES 1/

VARIETY NAME	STEM LENGTH FREQUENCY DISTRIBUTION 2/											AVERAGE STEM LENGTH
	0 - 5 mm. %	6 - 10 mm. %	11 - 15 mm. %	16 - 20 mm. %	21 - 30 mm. %	31 - 40 mm. %	41 - 50 mm. %	51 - 60 mm. %	61 - 70 mm. %	71 - 80 mm. %	81 + mm. %	

11. FLOWER COLOR 3/ (DETERMINE COLOR ON FRESHLY OPENED FLOWERS)

0 4 7 % PURPLE 0 4 3 % VARIEGATED 0 0 9 % YELLOW 0 0 1 % CREAM % WHITE

12. DISEASE, INSECT, AND NEMATODE RESISTANCE: (Enter resistance of submitted and check cultivars. Circle check cultivars used.)

DISEASE	CULTIVAR	% RESISTANT PLANTS	AVG. SEVERITY INDEX (ASI)	ASI LSD .05	TEST, YEAR & LOCATION 4/
BACTERIAL WILT	(SUBMITTED)	34.2	2.35	.30	1976 University of Minn., St. Paul
	(RES. CK.) VERNAL	34.1	2.17		
	(SUS. CK.) NARRAGANSETT	0.0	3.91		
ANTHRACNOSE	(SUBMITTED)				
	(RES. CK.) ARC				
	(SUS. CK.) SARANAC				
COMMON LEAF SPOT	(SUBMITTED)				
	(RES. CK.) RAMSEY				
	(SUS. CK.) RANGER				
DOWNY MILDEW	(SUBMITTED)				
	(RES. CK.) SARANAC				
	(SUS. CK.) KANZA				
PHYTOPHTHORA ROOT ROT	(SUBMITTED)	13.7	3.75	.45	1976 University of Minn., St. Paul
	(RES. CK.) AGATE	34.8	2.83		
	(SUS. CK.) SARANAC	2.0	4.31		
Fusarium wilt OTHER	(SUBMITTED)	23.3	3.36	.62	1978 University of Minn., St. Paul
	(RES. CK.) Moapa 69	87.1	.89		
	(SUS. CK.) MnGN-1	2.4	4.79		

1/ Preferred standards: Saranac, Vernal, Norseman, Lahontan, Mesa Sirsa. Twelve hours light at 25° C with 20,000 lux of cool white florescent; 2,000 lux of incandescent filament light and twelve hours darkness at 5° C.

2/ From cotyledonary node to tip of stem 20 days after planting.

3/ For further clarification consult USDA Agricultural Handbook No. 424.

4/ Give: The institution in charge of test, (2) year, and (3) location of test. Describe test procedure if it differs from procedure suggested in ARS-NC-19, September 1974.

12. DISEASE, INSECT, AND NEMATODE RESISTANCE: (Enter resistance of submitted and check cultivars. Circle check cultivars used.)

DISEASE	CULTIVAR	% RESISTANT PLANTS	AVG. SEVERITY INDEX (ASI)	ASI LSD .05	TEST, YEAR & LOCATION ^{4/}
OTHER	(SUBMITTED)				
	(RES. CK.)				
	(SUS. CK.)				
OTHER	(SUBMITTED)				
	(RES. CK.)				
	(SUS. CK.)				
INSECT	CULTIVAR	% SEEDLING SURVIVAL	AVG. SEVERITY INDEX (ASI)	ASI LSD .05	TEST, YEAR & LOCATION ^{4/}
PEA APHID	(SUBMITTED)				
	(RES. CK.) KANZA				
	(SUS. CK.) RANGER				
SPOTTED ALFALFA APHID	(SUBMITTED)				
	(RES. CK.) KANZA				
	(SUS. CK.) RANGER				
INSECT	CULTIVAR	% DEFOLIATION	AVG. SEVERITY INDEX (ASI)	ASI LSD .05	TEST, YEAR & LOCATION ^{4/}
ALFALFA WEEVIL	(SUBMITTED)				
	(RES. CK.) ARK				
	(SUS. CK.) VERNAL				
INSECT	CULTIVAR	% RESISTANT PLANTS	EMERGED ADULTS PER PLANT	EMERGED LSD .05	TEST, YEAR & LOCATION ^{4/}
ALFALFA SEED CHALCID	(SUBMITTED)				
	(RES. CK.) LAHONTAN				
	(SUS. CK.) SONORA				
INSECT	CULTIVAR	% RESISTANT PLANTS	AVG. SEVERITY INDEX (ASI)	ASI LSD .05	TEST, YEAR & LOCATION ^{4/}
POTATO LEAF-HOPPER	(SUBMITTED)	10.21	5.47		1977, Ames, Iowa, North American Plant Breeders
	Weevilcheck (RES. CK.)	36.82	4.03	.37	
	Saranac (SUS. CK.)	7.95	5.48		
OTHER	(SUBMITTED)				
	(RES. CK.)				
	(SUS. CK.)				

^{4/} Give: The institution in charge of test, (2) year, and (3) location of test. Describe test procedure if it differs from procedure suggested in ARS-NC-19, September 1974.

12. DISEASE, INSECT, AND NEMATODE RESISTANCE: (Enter resistance of submitted and check cultivars. Circle check cultivars used.)

INSECT	CULTIVAR	% RESISTANT PLANTS	AVG. SEVERITY INDEX (ASI)	ASI LSD .05	TEST, YEAR & LOCATION 4/
OTHER	(SUBMITTED)				
	(RES. CK.)				
	(SUS. CK.)				
STEM NEMATODE	(SUBMITTED)				
	(RES. CK.) LAHONTAN				
	(SUS. CK.) RANGER				
NORTHERN ROOT KNOT NEMATODE	(SUBMITTED)				
	(RES. CK.) NEV. SYN. XX				
	(SUS. CK.) LAHONTAN				
SOUTHERN ROOT KNOT NEMATODE	(SUBMITTED)				
	(RES. CK.) MOAPA 69				
	(SUS. CK.) LAHONTAN				
OTHER	(SUBMITTED)				
	(RES. CK.)				
	(SUS. CK.)				

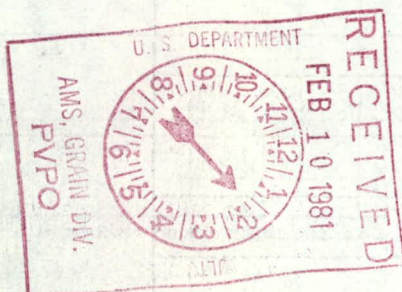
13. INDICATE A VARIETY THAT MOST CLOSELY RESEMBLES THE VARIETY SUBMITTED FOR THE FOLLOWING CHARACTERS:

CHARACTER	VARIETY	CHARACTER	VARIETY
AREA OF ADAPTATION	Vernal	PLANT HEIGHT	Vernal
RECOVERY AFTER CUTTING	Vernal	WINTER HARDINESS	Vernal

REFERENCES

Barnes, D.K., and C.H. Hanson, An Illustrated Summary of Genetic Traits in Tetraploid and Diploid Alfalfa, ARS Technical Bul. 1370.
 Barnes, D.K., et al, Standard Tests to Characterize Pest Resistance in Alfalfa Varieties. ARS-NC-19, September 1974.
 Nittler, L.W., G.W. McKee, and J.L. Newcomer, Principles and Methods of Testing Alfalfa Seed for Varietal Purity. New York Agricultural Experiment Station Bul. 807.
 USDA Agricultural Handbook No. 424.

COMMENTS



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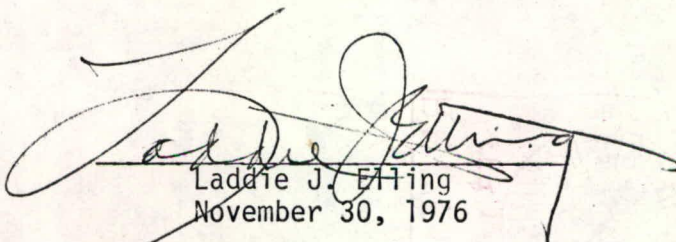
1976 Fall Dormancy Trial*
University of Minnesota

Entry	% Plants in each class**										Average Score
	0	1	2	3	4	5	6	7	8	9	
Standard Checks											
African	1	9	25	23	30	10	2	0	0	0	3.11
DuPuits	0	0	6	11	36	27	15	5	0	0	4.53
Saranac	0	0	1	2	10	9	34	27	14	3	6.25
Ranger	0	0	0	1	2	9	20	33	33	2	6.92
Vernal	0	0	0	0	1	3	13	33	45	5	7.35
Norseman	0	0	0	0	0	0	0	5	34	61	8.56
LSD (.05)											.55
CV (%)											6.8

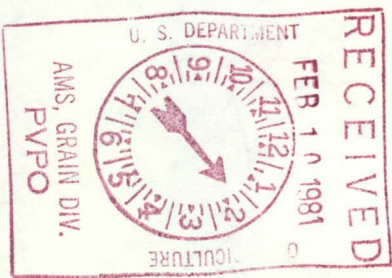
* Seeded 3-29-76 in greenhouse and transplanted to the field 6-15-76. Spaced 10-12 inches apart in 30" rows. Four replications. Plants clipped 9-8-76. Fall dormancy readings made 10-14-76.

** Fall dormancy scored 0-9: 0 = 18" or higher, 1 = 16"-18", 2 = 14"-16", 3 = 12"-14", 4 = 10"-12", 5 = 8"-10", 6 = 6"-8", 7 = 4"-6", 8 = 2"-4", 9 = 0"-2".

Your entry(ies)	North American Plant Breeders - Dr. James Moutray										
NAPB51	0	0	2	6	13	20	36	18	5	0	5.55
NAPB52	0	0	1	1	2	13	23	33	23	4	6.69
→ NAPB53	0	0	0	0	0	0	3	13	57	27	8.10
NAPB61	0	0	0	4	9	16	23	32	16	0	6.19
Anchor P4	0	0	0	1	9	23	23	23	18	3	6.22
NAPB63	0	0	0	0	5	18	24	39	7	7	6.45


Laddie J. Elling
November 30, 1976

8300081





8100067

NORTH AMERICAN PLANT BREEDERS INC.

R.R. #3
AMES, IOWA 50010
(515) 292-2432

November 28, 1983

Mr. Ken Evans
Plant Variety Protection Office
USDA, Agricultural Marketing Service
Livestock, Meat, Grain and Seed Division
National Agricultural Library Building
Beltsville, Maryland 20705

C Addendum
EXHIBIT D - ADDENDUM

SUBJECT: Alfalfa Application No. 8100067 'Maverick'

Dear Ken:

1. Phytophthora root rot resistance

I believe Maverick is different from Roamer, Kane and Spredor in Phytophthora resistance. Maverick has moderate resistance at 22%. Agate adjusts to 43% and the data you have on Maverick shows 13.7% compared to Agate at 34.8%. The severity of the test lowered Agate by 8%, so both adjust upward by this amount. The other varieties are susceptible, but I have not come up with the data from our own test or Minnesota's either.

2. Creeping habit - See Table 5

Maverick does not creep as strongly as Roamer or Spredor. All entries were down in creeping habit due to dry weather, but all were in the same trial.

3. Flower color *ok*

Table 6 shows Kane to have no yellow or cream flowers while Maverick has 9% yellow and 1% cream. Spredor has 17% fewer purple and 22% more variegated flowers than Maverick. Roamer has 22% more purple and 15% fewer variegated flowers than Maverick. It also has one third as many yellows.



Page Two
November 28, 1983

4. Potato Leafhopper

Maverick has significantly less tolerance to this pest than does Spredor, as shown in Table 7.

I hope this information will adequately distinguish Maverick from other varieties.

If you have a question on my Phytophthora statement, Dr. Don Barnes at the University of Minnesota would be the man to talk to. Mention that the test was in 1976.

Sincerely,

Jim Moutray

Dr. Jim B. Moutray
Director of Forage Research

JBM/rf



Table 5

Creeping Habit of Alfalfa Varieties

North American Plant Breeders, Ames, Iowa*

	<u>% Creeping-Rooted Plants October 1983</u>
Maverick	1.9
Kane	2.4
Prowler	34.5
Spredor	16.8
Roamer	12.4
Spredor II	51.7

* Transplanted May 1983 in 30: rows, plants one foot apart within the rows.



Table 6

Flower Color of Alfalfa Varieties

North American Plant Breeders, Ames, Iowa

	<u>Purple</u>	<u>Variegated</u>	<u>Yellow</u>	<u>Cream</u>	<u>White</u>
Mercury	85	15	0	0	0
Kane	68	32	0	0	0
Maverick	47	43	9	0	0
Prowler	68	29	3	0	0
Trident	91	8	0	1	0
NAPB 11	82	18	0	0	0
Spredor	30	65	5	0	0
Roamer	69	28	3	0	0
Baron	97	3	0	0	0
Answer	99	1	0	0	0
G-7730	92	8	0	0	0
Spredor II	55	45	0	0	0
Armor	94	6	0	0	0
Endure	82	18	0	0	0
Expo	93	7	0	0	0
Apollo II	86	14	0	0	0
Apollo	84	16	0	0	0
Duke	86	14	0	0	0
Advantage	95	5	0	0	0
Thunder	93	7	0	0	0
Conquer	95	5	0	0	0



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Table 7

Potato Leafhopper Tolerance of Alfalfa Varieties

July 1983, Ames, Iowa

	<u>Average Severity Index*</u>
Mercury	3.92
Kane	4.22
Maverick	4.10
Prowler	3.55
Trident	4.16
NAPB 11	4.10
Spredor	3.62
Roamer	3.77
Baron	4.03
Answer	4.23
G-7730	4.12
Spredor II	3.83
Armor	3.65
Endure	3.77
Expo	4.16
Apollo II	3.89
Apollo	4.01
Conquer	4.02
Duke	3.91
Thunder	3.85
Advantage	3.79
C.V. %	7.24
L.S.D. (.05)	0.40

* 1 = no damage, 6 = severe yellowing and stunting



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BILL OF SALE AND ASSIGNMENT

KNOW ALL MEN BY THESE PRESENTS that AGRIPRO BIOSCIENCES INC., a Delaware corporation (hereinafter referred to as "Seller"), pursuant to that certain Asset Purchase Agreement of even date herewith by and between Seller and AGR ACQUISITION CORPORATION, a Delaware corporation (hereinafter referred to as "Buyer") and for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, does hereby grant, bargain, sell, assign, convey and deliver unto Buyer, all of Seller's right, title and interest in and to the plant varieties owned/registered by Seller and more particularly set forth on Exhibit A attached hereto for which PVP Certificates have been issued by or may be pending before the U. S. Department of Agriculture.

TO HAVE AND TO HOLD UNTO PURCHASER, its successors and assigns forever.

IN WITNESS WHEREOF, Seller has executed this Bill of Sale and Assignment as of the 30th day of June, 1994.

AGRIPRO BIOSCIENCES INC.

BY: W.A. Zama
Title: President

STATE OF KANSAS, COUNTY OF JOHNSON

Before me, the undersigned, a Notary Public of the State and County aforesaid, personally appeared W.A. ZAMA with whom I am personally acquainted (or proved to me on the basis of satisfactory evidence) and who, upon oath, acknowledged himself to be the PRESIDENT of Agripro Biosciences Inc., the within named bargainer, a corporation, and that he as such PRESIDENT, being authorized so to do, executed the foregoing instrument for the purposes therein contained by signing the name of the corporation by himself as PRESIDENT.

WITNESS my hand and Notarial Seal at office the day and year above written.

Alma M. Weaver
Notary Public

My Commission Expires:

June 22, 1998

ALMA M. WEAVER

NOTARY PUBLIC

STATE OF KANSAS

My Appt. Exp. June 22, 1998

Office of the Secretary of State

I, EDWARD J. FREEL, SECRETARY OF STATE OF THE STATE OF DELAWARE, DO HEREBY CERTIFY THE ATTACHED IS A TRUE AND CORRECT COPY OF THE CERTIFICATE OF AMENDMENT OF "AGR ACQUISITION CORPORATION", CHANGING ITS NAME FROM "AGR ACQUISITION CORPORATION" TO "AGRIPRO SEEDS, INC.", FILED IN THIS OFFICE ON THE THIRTIETH DAY OF JUNE, A.D. 1994, AT 4:30 O'CLOCK P.M.

A CERTIFIED COPY OF THIS CERTIFICATE HAS BEEN FORWARDED TO THE NEW CASTLE COUNTY RECORDER OF DEEDS FOR RECORDING.



Edward J. Freel

SECRETARY OF STATE
AUTHENTICATION:

7169071

DATE:

07-01-94

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CERTIFICATE OF AMENDMENT
OF
CERTIFICATE OF INCORPORATION
OF
AGR ACQUISITION CORPORATION

AGR Acquisition Corporation, a corporation organized and existing under and by virtue of the General Corporation Law of the State of Delaware,

DOES HEREBY CERTIFY:

FIRST: that the Board of Directors of said corporation, by the unanimous written consent of its members filed with the minutes of the Board, adopted a resolution proposing and declaring advisable the following amendment to the Certificate of Incorporation of said corporation:

RESOLVED, that the Certificate of Incorporation of this corporation be amended by changing the Article thereof numbered "ARTICLE I" so that, as amended, said Article shall be and read as follows:

"ARTICLE I

Name

The name of the corporation (hereinafter called the 'Corporation') is Agripro Seeds, Inc."

SECOND: That in lieu of a meeting and vote of stockholders, the sole shareholder of the corporation has given unanimous written consent to said amendment in accordance with the provisions of Section 228 of the General Corporation Law of the State of Delaware.

THIRD: That the aforesaid amendment was duly adopted in accordance with the applicable provisions of Sections 242 and 228 of the General Corporation Law of the State of Delaware.

FOURTH: That the capital of said corporation shall not be reduced under or by reason of said amendment.

IN WITNESS WHEREOF, said AGR Acquisition Corporation has caused this certificate to be signed by Gary T. Hancock, its President, and attested by Ann Steelman, its Secretary, this 30th day of June, 1994.

AGR ACQUISITION CORPORATION

BY: Gary T. Hancock
Gary T. Hancock, President

ATTEST:

BY: Ann Steelman
Ann Steelman, Secretary

